SUPPLY OF REFRIGERANT IN NON-REFILLABLE (DISPOSABLE) CONTAINERS

CONSULTATION PAPER

Summary

1. The Government proposes to ban the import into the UK, and the supply to the UK market, of refrigerant in non-refillable (disposable) containers with a capacity of more than 1.4 litres. The ban is proposed because use of these containers can lead to unnecessary pollution, particularly emissions of substances that deplete the ozone layer. **Comments are invited on the proposals and must be received at the address on page 4 by 24 April 1992.**

Background

2. The majority of refrigerants used today are substances that deplete the ozone layer. These are either CFCs or HCFCs (which typically have about 5% of the ozone depleting potential of the CFC refrigerants). It is important that these substances are recycled because recycling reduces the need for new CFC production as well as avoiding emissions to atmosphere.

3. Refrigerant is supplied in several ways; in bulk pressure tanks, returnable drums and, most commonly, pressure vessels which are returnable to, and remain the property of, the supplier. Each such cylinder is individually identifiable and tested to comply with British Standards.

4. There has, however, been a rapid increase in the use of non-refillable containers (known in the industry as disposables). It is estimated that about 10% of the refrigerant on the UK market is now supplied in non-refillable containers. This has grown from a negligible share in 1990.

5. Containers which can be used only once act as a disincentive to recovery, removing the normal reverse distribution chain for

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recovered material. However, there is another considerable environmental problem; when containers are emptied a heel of gas always remains unless the container is vacuum evacuated. With refillables this is no problem as the vessel is not vented to atmosphere but returned for refilling with virgin material. With disposables the heel (between 1/2 and 1 kilo) is emitted to atmosphere. Such containers are labelled "Attention non refillable. To dispose: Empty container completely by venting remaining gas. Leave valve open. Do not incinerate." This is because when they are destroyed - be crushing or melting for scrap, - any gas remaining under pressure could cause the vessels to explode.

Efforts to discourage the supply of refrigerant in disposables

6. A voluntary agreement reached in June 1990 between the European Commission and the European refrigeration industry (Annex A) called for Member States to discourage the use of disposable containers. We understand, from other Member States, that most countries in the European Community have already banned the supply of refrigerant in disposable containers.

7. The UK Government has an agreement with the two UK CFC producers that they will not supply refrigerant in non-refillable containers. The Refrigeration Industry Board (RIB) are strongly supportive of this and issued a policy statement on 4 July 1991 reiterating their concerns over the use of these cylinders.

8. In spite of these efforts, use of non-refillable containers is increasing rapidly. While the two UK producers do not supply refrigerant in this way, material is being imported into the UK in these containers from a number of sources.

Proposal

9. The Government's proposal would prohibit both the supply to the UK market and import into the UK of gases on the list at

Annex B in non-refillable containers with an internal volume of more than 1.4 litres.

10. Refrigerants marked with an * in Annex B are controlled substances under the terms of the Montreal Protocol. Their production and import is to be phased out in Europe by mid 1997 (apart from R13b1 which is to be phased out by 2000). The UK is committed to phasing out all these substances by 1995 (by 1994 for 13b1) and is pressing for other countries to agree the same when the controls are reviewed in November. These substances are subject to import quotas allocated by the European Commission and each import must be accompanied by a licence. Producers, importers and exporters of these substances are required to report data to the EC.

11. Refrigerants marked with an + in Annex B are transitional substances under the Montreal Protocol. Producers, importers and exporters of these substances are already required to report data to the EC. A Resolution in London in 1990 called for these substances to be used responsibly and only in areas where they are needed to replace the more damaging CFCs. Controls on transitional substances are likely to be introduced when the Montreal Protocol is reviewed in November 1992. The UK is pressing for a limit on consumption of HCFCs and also controls on the areas where HCFCs can be used.

12. "Non-refillable containers" means containers which are designed (by use of a device such as a non-refillable valve or piercing disc) to be filled only once. Under R 17 (c) of the Pressure Systems and Transportable Gas Regulations (1989) it is prohibited to refill containers designed to be non-refillable.

13. Non-refillable containers with a capacity of between 1.4 litres and 5 litres are defined as transportable gas containers by the Pressure Systems and Transportable Gas regulations (1989). Above 5 litres they are mobile pressure systems and subject to the requirements of the regulation for such systems.

Responses to this Consultation Paper

14. Comments are invited from users and suppliers of refrigerants on:

- the implications for them and any difficulties they would face as a result of the proposal (including estimates of any additional costs they may face); and
- the practicality of the ban, including whether any exemptions should be permitted and why.

Comments should be sent to Sean Ryan, Global Atmosphere Division, Department of the Environment, Room B259, Romney House, 43 Marsham Street, London SW1P 3PY by 24 April 1992.

15. The Department may wish to publish responses to this consultation paper in due course, or to deposit them in the Libraries of the Houses of Parliament or the Department's library, unless specifically requested to treat a response as confidential. Confidential responses may nevertheless be included in any statistical summary of numbers of comments received and views expressed. Respondents are therefore requested to submit three copies of their comments.

ANNEX A

COMMISSION RECOMMENDATION

of 27 June 1990

on the reduction of chlorofluorocarbons used by the Community's refrigeration industry

(90/438/EEC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 155 thereof,

Whereas the Community has signed the Vienna Convention for the protection of the ozone layer, together with all of its Member States;

Whereas the Community has signed the Montreal Protocol on substances that deplete the ozone layer, together with all of its Member States;

Whereas the Council has adopted on 14 October 1988 Decision 88/540/EEC (1) for the conclusion and ratification of the Vienna Convention and the Montreal Protocol;

Whereas the Council has adopted on 14 October 1988 Regulation (EEC) No 3322/88 (2) for the implementation at Community level of the Montreal Protocol;

Whereas recent scientific studies have confirmed that some depletion of the ozone layer has already occured and that the observed changes may be due, wholly or in part, to the increased atmospheric abundance of trace gases, particularly chlorofluorocarbons (CFCs);

Whereas it is important to achieve the greatest feasible substitution of the CFCs listed in Annex I and halons in all areas of their use;

Whereas a number of Member States have reached voluntary agreements with their refrigeration industries for the progressive reduction in view of possible elimination of the CFCs listed in Annex I from these products;

Whereas the Council resolution of 14 October 1988 for the limitation of use of chlorofluorocarbons and halons (3) invites the Commission, in cooperation with the Member States, to initiate discussions on voluntary agreements at the Community level with all the industries concerned, wherever feasible to substitute the CFCs listed in Annex I and halons in products or in equipment or processes using them;

Whereas the European CFC producers represented by the European Chemical Industry Federation (CEFIC) have declared that they will recover and recycle used CFCs where technically feasible;

Whereas the refrigeration industry of the Community has elaborated a code of practice (4) concerning the design, installation, maintenance, and repair of refrigeration equipment as well as waste disposal for reducing the release of CFCs into the atmosphere;

Whereas, pending the availability of alternative substances with zero ozone-depletion potential (ODP), and which are environmentally acceptable in other respects, the reductions referred to in paragraph I.2 will depend upon the commercial availability and use of alternative substances which have a positive but relatively low ozone-depletion potential;

Whereas in some sectors of the refrigeration industry, such as domestic refrigeration, only marginal reductions in the consumption of controlled substances can be achieved prior to the commercial availability of alternative refrigerants;

Whereas the Council of Ministers concluded on 2 March 1989 that there is a need for a reduction of at least 85 % as soon as possible in the current level of production and use of the CFCs covered by the Montreal Protocol with a view to their being eliminated towards the end of the century, and for the said Protocol to be strengthened accordingly,

HEREBY RECOMMENDS:

I. to all sectors of the refrigeration and air conditioning industry in the Community, including manufacturers, installers and those undertaking the servicing of refrigeration and air conditioning equipment; and to all users of such equipment in the commercial, industrial, and public sectors together to seek:

   1. to limit the consumption of the fully halogenated chlorofluorocarbons listed in Annex I used as refrigerants in refrigeration, with a view to phasing them out before the end of the century;

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(1) OJ No L 297, 31. 10. 1988, p. 8.

(2) OJ No L 297, 31. 10. 1988, p. 1.

(3) OJ No C 285, 9. 11. 1988, p. 1.

(4) CECOMAF GT1-001 : Reduction of chlorofluorocarbon emissions from refrigerating systems.

2. to reduce the consumption of fully halogenated chlorofluorocarbons by at least 25 % by the end of 1991 and by at least 50 % by the end of 1993 with respect to the 1986 consumption. In 1986 the Community consumption of the chlorofluorocarbons listed in Annex I in refrigeration was 28 800 ODP weighted tonnes. Progress in reduction will be monitored by the annual sales statistics for the substances listed in Annex I issued by the producers in the Community;

3. to take all practicable measures to capture and return to the suppliers or other appropriate centres any used refrigerant for reclamation where technically feasible;

II. to the federations mentioned in Annex II:

1. to use their best endeavours to ensure that the refrigeration industry within the Community minimizes its consumption of the controlled substances and achieves the reductions referred to in I.2;

2. to present to the Commission an annual report on the progress made in respect of the target reductions mentioned above, including statistics where practicable and starting with the year 1989;

III. to Member States to use their best endeavours:

1. to introduce requirements, in conjunction with their industry, for training, of operatives and technicians in the safe handling of refrigerants, leading to a certificate of competency; and, through their technical institutions, to establish a precise definition of professional qualification of operatives and technicians and technical competency of companies;

2. to encourage research and development of equipment used in the recovery of CFCs;

3. to introduce measures with a view to phasing out the use of disposable CFC containers;

4. to encourage recovery and recycling and to support the efforts of training of personnel;

5. to ensure that the aims of the recommendation are achieved by contributions from their respective territories.

Done at Brussels, 27 June 1990.

For the Commission
Carlo RIPA DI MEANA
Member of the Commission

ANNEX I

Substances covered by this recommendation

Substance	Ozone-depleting potential
CFC13 (CFC- 11)	1,0
CF2C12 (CFC- 12)	1,0
C2F3C13 (CFC-113)	0,8
C2F4C12 (CFC-114)	1,0
C2F5C1 (CFC-115)	0,6

ANNEX II

1. AREA : Air Conditioning & Refrigeration European Association
2. CECED : European Committee of Manufacturers of Electrical Domestic Equipment
3. CECOMAF : European Committee of Manufacturers of Refrigeration Equipment
4. RIB : Refrigeration Industry Board (RIB/CECOMAF)

ANNEX B

Refrigerant	chemical name	formula
R12	dichlorodifluoromethane	CF_2Cl_2 *
R13	chlorotrifluoromethane	CF_3Cl *
R114	dichlorotetrafluoroethane	$C_2F_4Cl_2$ *
R115	chloropentafluoroethane	C_2F_5Cl *
R13b1	bromotrifluoromethane	CF_3Br *
R22	chlorodifluoromethane	CHF_2Cl +
R124	chlorotetrafluoroethane	C_2HF_4Cl +
R23	trifluoromethane	CHF_3
R32	difluoromethane	CH_2F_2
R125	pentafluoroethane	C_2HF_5
R134a	tetrafluoroethane	$C_2H_2F_4$
R142b	chlorodifluoroethane	$C_2H_3F_2Cl$ +
R152a	difluoroethane	$C_2H_4F_2$

and mixtures containing these substances, such as R500, R502 and R503.

The Regulations shall also apply to the following refrigerants (and mixtures containing them) when they are supplied with a pressurising gas (for example nitrogen or carbon dioxide) such that the total pressure in the container is greater than 3 bar at 50°C.

R11	trichlorofluoromethane	$CFCl_3$ *
R113	trichlorotrifluoroethane	$C_2F_3Cl_3$ *
R123	dichlorotrifluoroethane	$C_2HF_3Cl_2$ +
R141b	dichlorofluoroethane	$C_2H_3FCl_2$ +

* These substances are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer.

+ These substances are listed as transitional substances under the Montreal Protocol.